What To Test, And When

Udi Dahan – The Software Simplist

.NET Development Expert & SOA Specialist

Microsoft Solutions Architect MVP

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What are we paid to do?

Create business value

Does finding bugs count as creating value?

NO.

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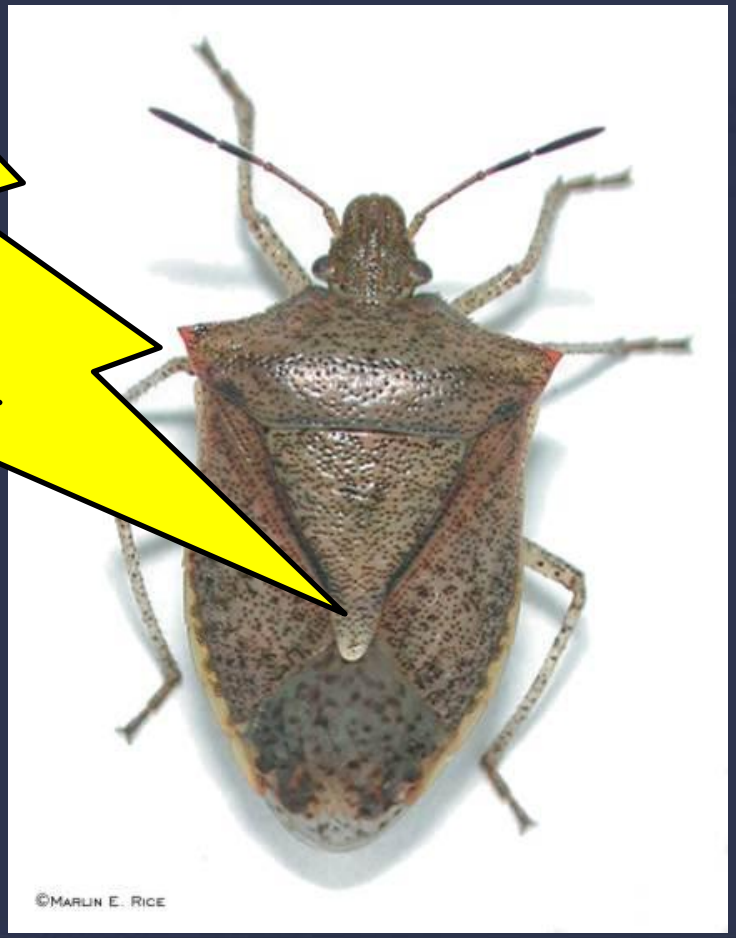
Does **fixing** bugs count as creating value?

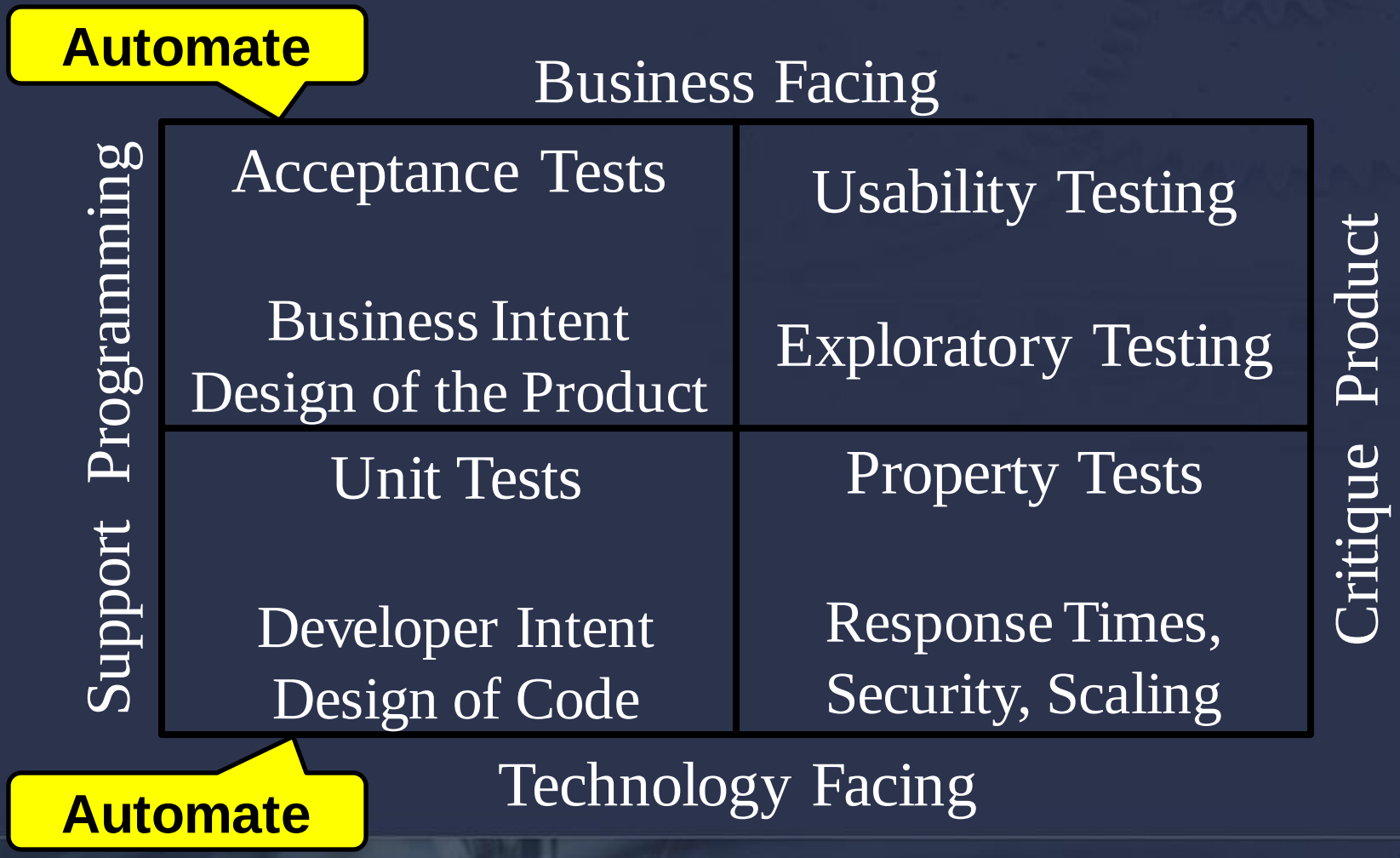


Yes.

Does **preventing** bugs count as creating value?

Absolutely.

What kinds of tests are there?



Source: Brian Marick

Tests tell us where we are

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But what should I test, and when?

Risk endangers business value

Handling schedule risk

Handling schedule risk

“Iterations” means doing some (or all) of these

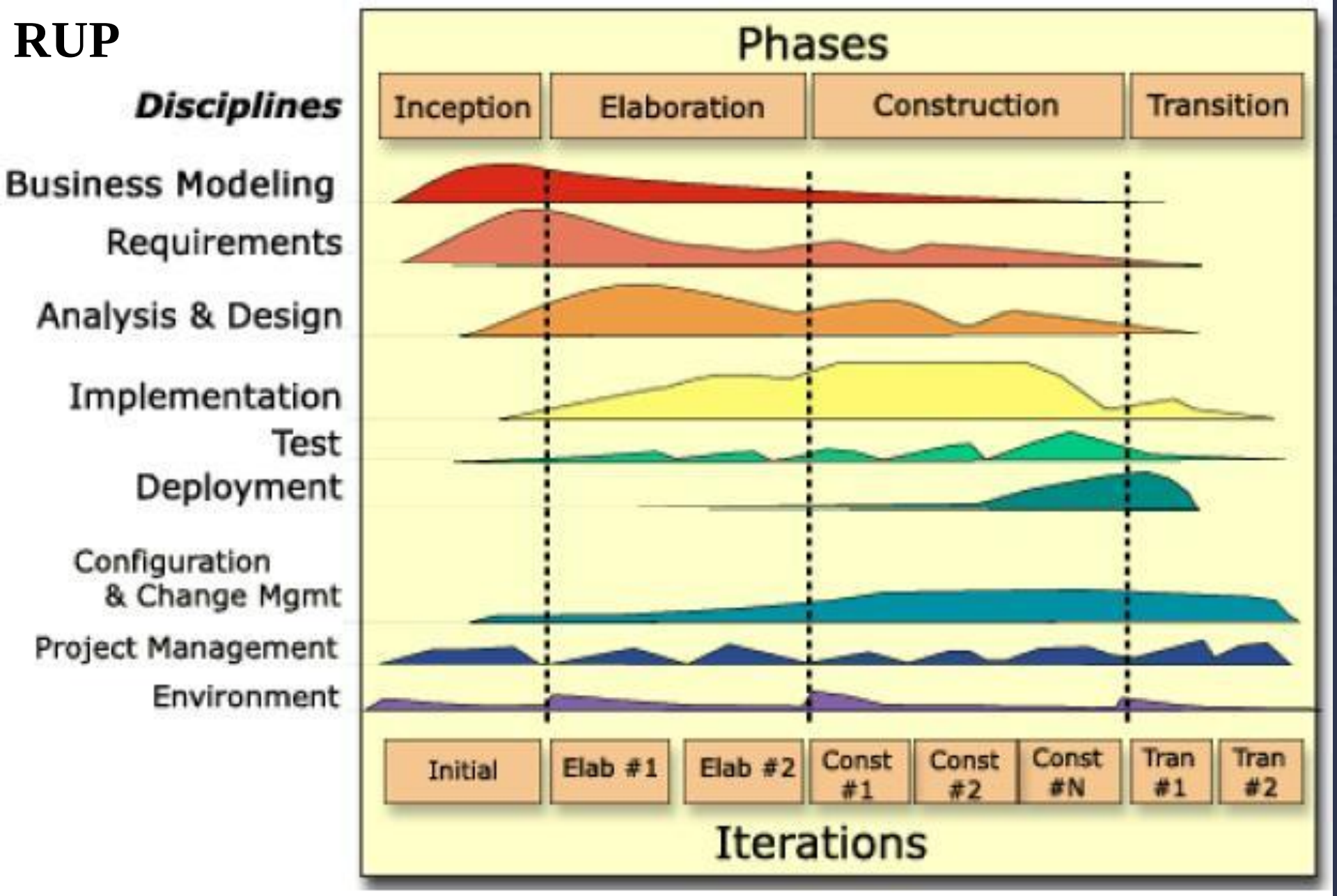
Acceptance	Usability Exploratory
Unit	Property

every iteration

Nothing happens outside an iteration

`Testing is a lifecycle issue`

RUP


Phases
Disciplines
Inception
Elaboration
Construction
Transition
Business Modeling
Requirements
Analysis & Design
Implementation
Test
Deployment
Configuration & Change Mgmt
Project Management
Environment
Initial
Elab #1
Elab #2
Const #1
Const #2
Const #N
Tran #1
Tran #2
Iterations

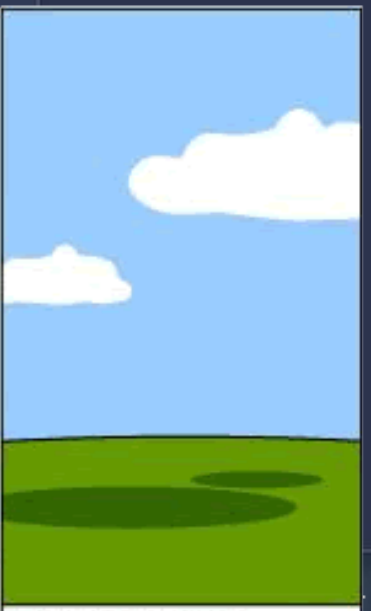
How the customer explained it

How the Project Leader understood it

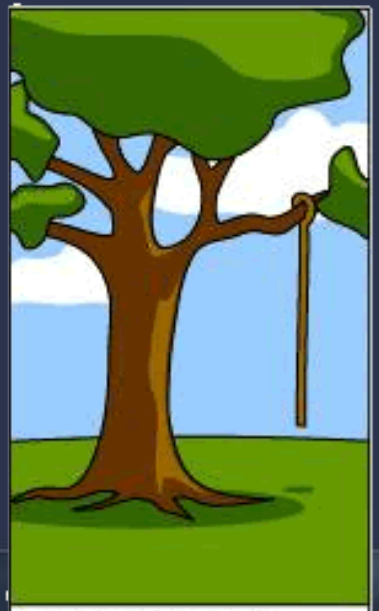
How the Analyst designed it

How the Programmer wrote it

How the Business Consultant described it

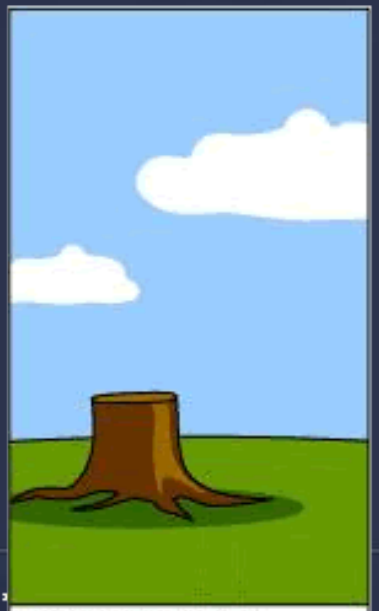


How the project was documented



What operations installed

How the customer was billed



How it was supported

What the customer really needed

So what should I test, and when?

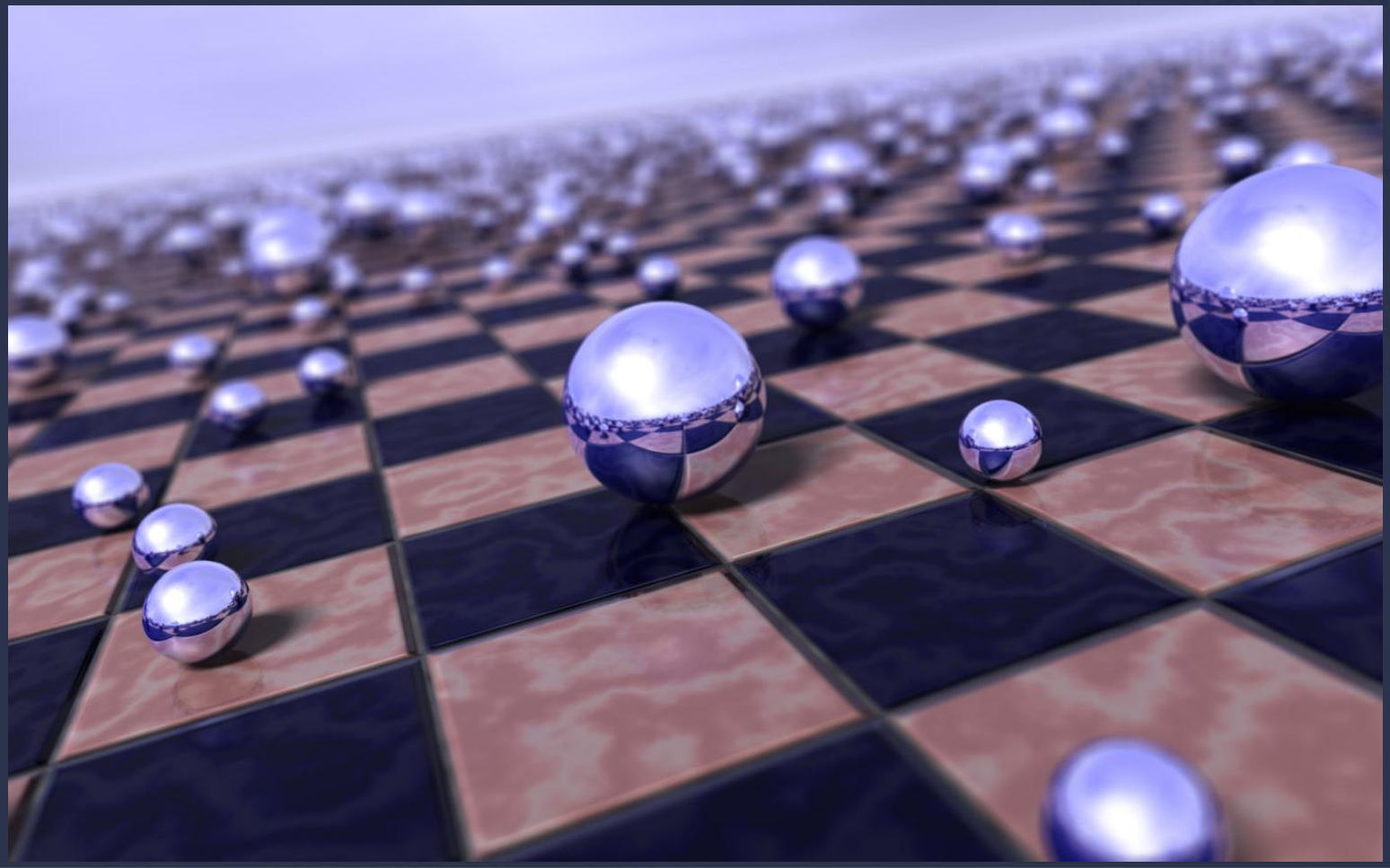
Test what's risky

- Performance?
- Security?
- Complex business logic?
- External interfaces?

Feature test all the time

- Unit tests while writing code
- Acceptance tests as soon as part of the feature works

We're going to have a lot of tests



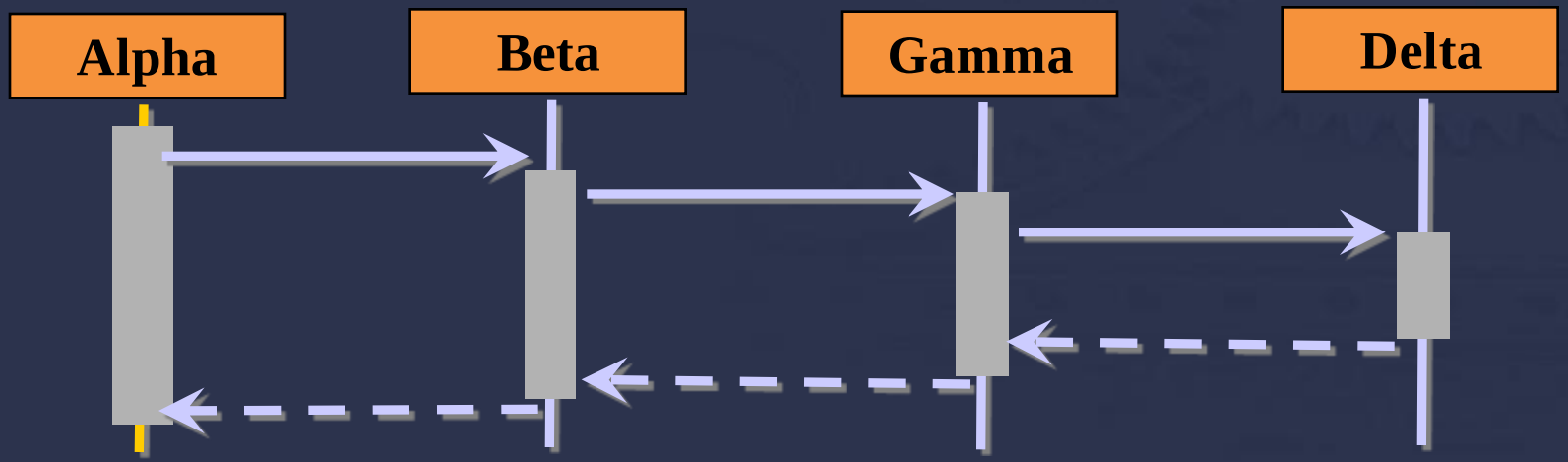
Decide what to run when

Regressions – everyone's nightmare

- January 1st: Bug A found
- January 15th: Bug A fixed
- February 1st: Bug B found
- February 15th: Bug B fixed
- March 1st: Bug A found again

Why don't bugs stay fixed?

Regressions – why they happen

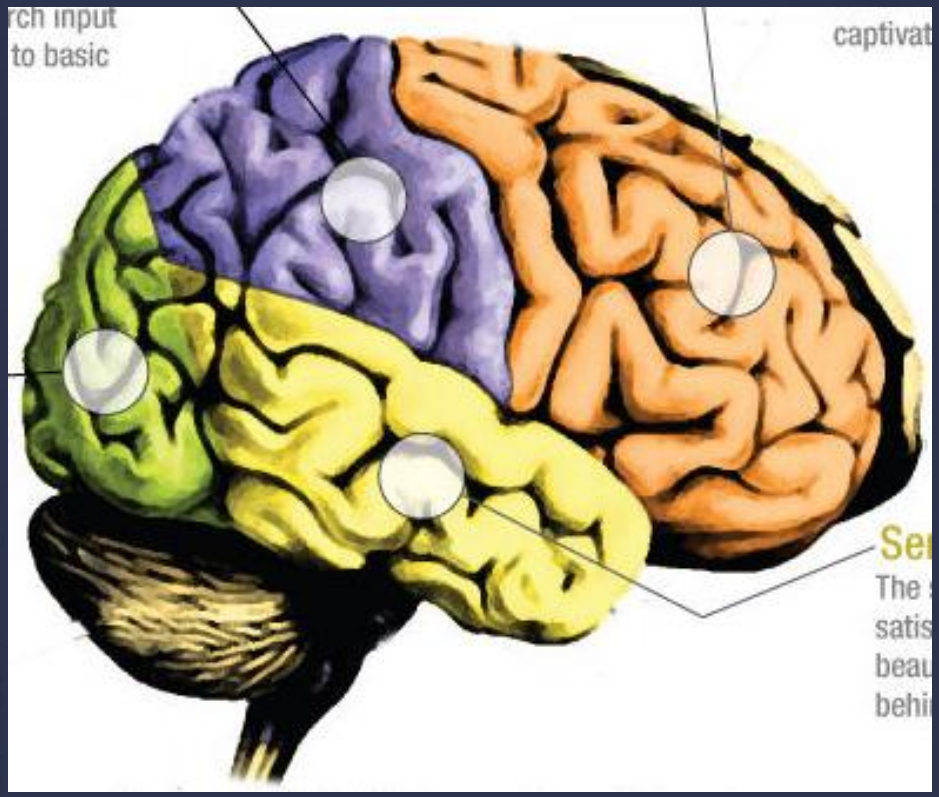


- In order to fix bug A, you change Gamma
- In order to fix bug B, you

What if it's someone else, and not you?

- Changing Delta might cause Gamma to break

Regressions - An ounce of prevention…



Wouldn't it be great if there was something intelligent that could help?

That's what automated tests do

But no object is an island

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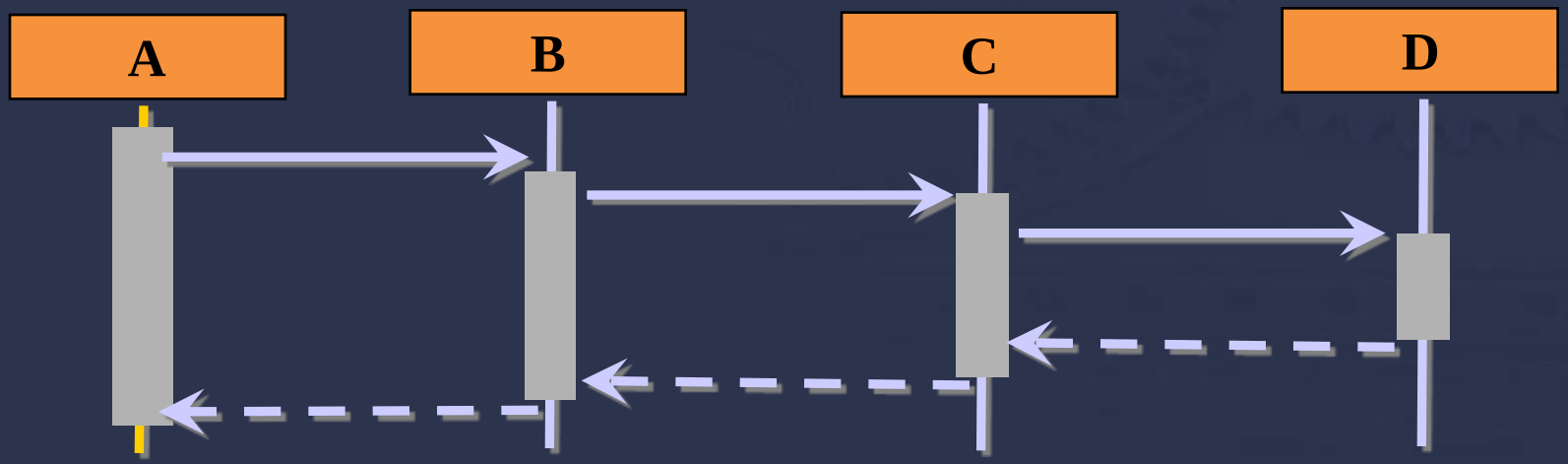
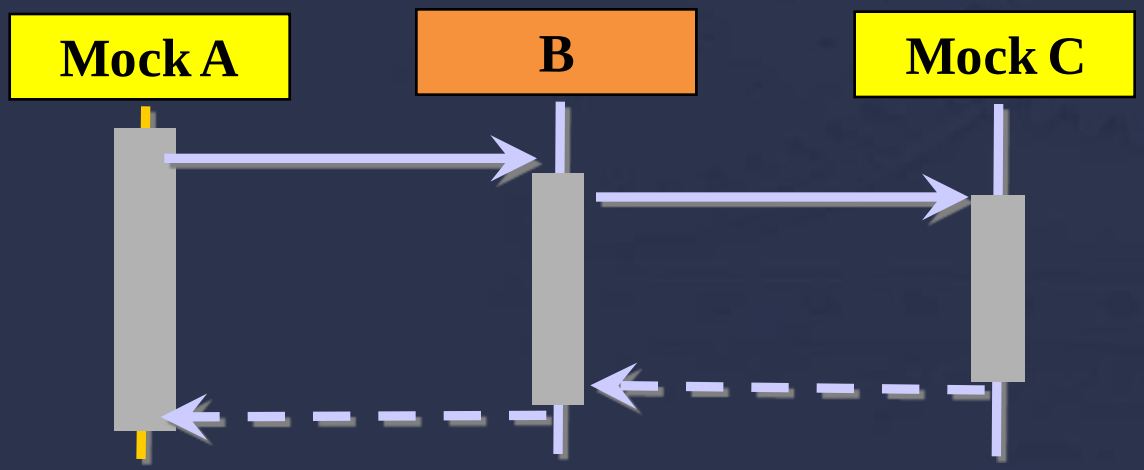
Is there even a “unit” ?



Maybe we should focus on interactions

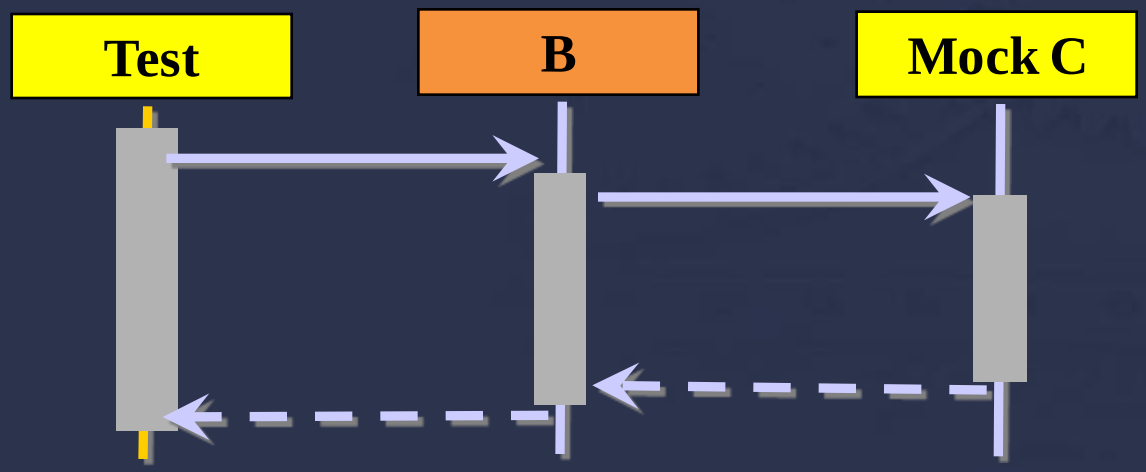
Testing with Mock Objects



Looks like a unit test

But validates state and interactions

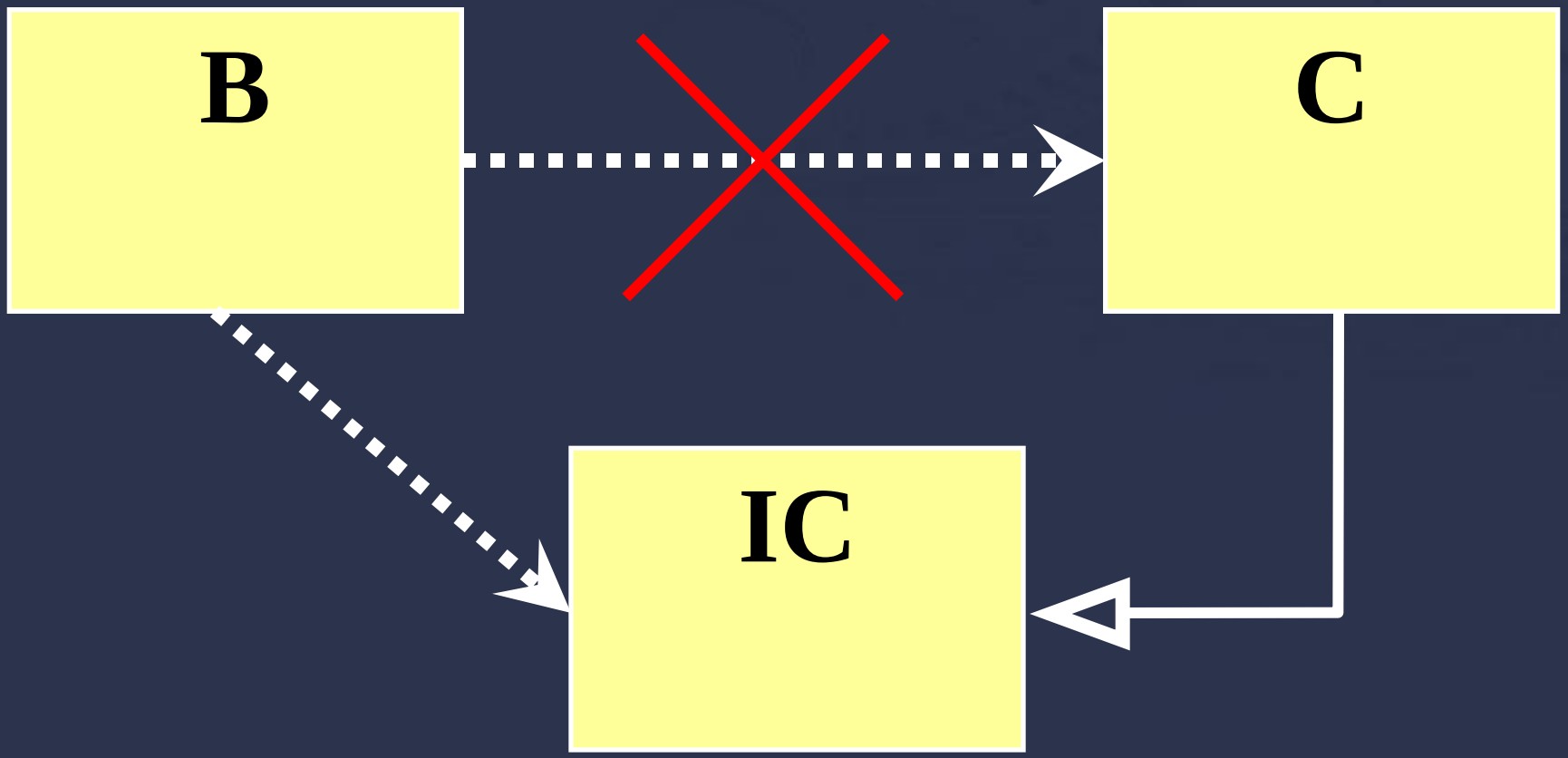
But if we want to test “B”



We can’t have it depend on C

We need to replace C

Changing the design might help



Design for testability

Coverage: how much?

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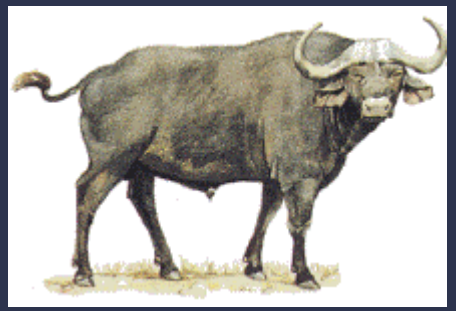
Load

A strong donkey is no replacement for a heavy ox.



Thank you

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